

REMARKS

Applicant has carefully studied the outstanding Official Action. The present amendment is intended to be fully responsive to all points of rejection and is believed to place the application in condition for allowance. Favorable reconsideration and allowance of the present application are hereby respectfully requested.

The disclosure of the present application stands objected to because the paragraph on lines 3 - 5 of page 2 of the specification states: "The disclosures of all references mentioned above and throughout the present specification, as well as the disclosures of all references mentioned in those references, are hereby incorporated herein by reference." The Office Action states that "the references cited by references in specification are not clearly identified in the specification and therefore their incorporation by reference is improper."

Accordingly, the specification has been amended to read: "The disclosures of WO 02/079955; US 2004/0111613 A1 (publication of US 10/472,286); ETSI TS 102 822-3; and ISO/IEC 13818-6, are hereby incorporated herein by reference."

The objection to the specification is hereby deemed overcome.

Claims 16, 20, 24, 28, 29, 32, and 33 are all objected to since they all recite either a "presentation time stamp (PTS)" or they recite a "decoding time stamp (DTS)", and further on the claim recites one of "a PTS value" or "a DTS value". Although Applicant posits that the nature of a PTS and a DTS is such that having a PTS value and a DTS value is an inherent and an intrinsic property thereof, nonetheless, claims 16, 20, 24, 28, 29, 32, and 33 have been variously amended to recite either, "a value of the PTS" or "a value of the DTS" in the interest of clarity.

The objection to claims 16, 20, 24, 28, 29, 32, and 33 are hereby deemed overcome.

Claims 16 - 29 and 32 - 33 stand rejected under the second paragraph of 35 USC §112 for omitting essential elements. This statutory section requires a claim to "particularly [point] out and distinctly [claim] the subject

matter which the applicant regards as his invention.” This statutory requirement “means that the claim must have a meaning discernible to one of ordinary skill in the art when construed according to correct principles.” *Metabolite Laboratories, Inc. v. Laboratory Corp. of America Holdings*, 370 F.3d 1354, 1366, 71 USPQ2d 1081, 1089 (Fed. Cir. 2004). A claim can fail to satisfy this requirement “[o]nly after a thorough attempt to understand the meaning of a claim has failed to resolve material ambiguities....” *Metabolite*, 370 F.3d at 1366, 71 USPQ2d at 1090.

Claims 16 and 28 are specifically rejected for omitting a step for receiving a presentation time stamp (PTS). Applicant respectfully points out that the Office Action cites the ISO/IEC 13818-1 specification (referred to in the Office Action as being incorporated by reference in Thatcher). Applicant notes that the ISO/IEC 13818-1 specification has been made of record by the Office Action, and has been listed on the “Notice of References Cited” which accompanies the Office Action.

Page 4 of ISO/IEC 13818-1, paragraph 2.1.39, defines “presentation time stamp; PTS (system): A field that may be present in a PES packet header that indicates the time that a presentation unit is presented in the system target decoder.”

In that claim 16 recites “receiving a packetized elementary stream (PES) ...”, a person of ordinary skill in the art would be familiar with the definition of PTS, and would recognize that claim 16 inherently comprises a step for receiving the PTS, in the step for receiving a PES. Therefore, the meaning of the claim is not ambiguous and the second paragraph of §112 is satisfied.

Claim 28 recites “receiving, at the timecode handler, the PES”. As already discussed with reference to claim 16, in that claim 28 recites a step of receiving the PES, claim 28 inherently comprises a step for receiving the PTS, in the step for receiving a PES.

In spite of the inherent nature of the reception of the PTS, in order to advance the prosecution of the present application, claims 16 and 28 have been amended to recite that the PES comprises “a plurality of presentation time stamps (PTSS)”. The amendment is supported, inter-alia, on pages 3 and 13 of the disclosure.

Claims 16 and 28 are therefore deemed allowable, with respect to the outstanding 35 USC §112 rejection, in light of the above discussion.

Even though the Office Action did not specify detailed reasons for the rejection of claims 17 - 19 under 35 USC §112, Applicant assumes that the same basis for rejection applies to dependent claims 17 - 19 as applied to base claim 16, that is, as lacking the PTS receiving step.

Nevertheless, claims 17 - 19 all depend from claim 16, and recite additional patentable subject matter.

Claims 17 - 19 are therefore all deemed allowable, with respect to the outstanding 35 USC §112 rejection, in light of the above discussion of the allowability of claim 16, with respect to the outstanding 35 USC §112 rejection.

Claims 20 and 33 are specifically rejected for omitting a step for receiving a decoding time stamp (DTS). Page 3 of ISO/IEC 13818-1, paragraph 2.1.13, defines “decoding time stamp; DTS (system): A field that may be present in a PES packet header that indicates the time that an access unit is decoded in the system target decoder.”

In that claim 20 recites “receiving a packetized elementary stream (PES) ...”, a person of ordinary skill in the art would be familiar with the definition of DTS, and would recognize that claim 20 inherently comprises a step for receiving the DTS, in the step for receiving a PES. Therefore, the meaning of the claim is not ambiguous and the second paragraph of §112 is satisfied.

Claim 33 is an apparatus claim in means-plus-function form corresponding to claim 20.

In spite of the inherent nature of the reception of the DTS and PTS, in order to advance the prosecution of the present application, claims 20 and 33 have been amended to recite that the PES comprises “a plurality of presentation time stamps (PTSS)” and “a plurality of a decoding time stamps (DTSS)”. The amendment is supported, inter-alia, on pages 3 and 13 of the disclosure.

Claims 20 and 33 are therefore deemed allowable, with respect to the outstanding 35 USC §112 rejection, in light of the above discussion.

Even though the Office Action did not specify detailed reasons for the rejection of claims 21 - 23 under 35 USC §112, Applicant assumes that the

same basis for rejection applies to dependent claims 21 - 23 as applied to base claim 20, that is, as lacking the PTS receiving step.

Nevertheless, claims 21 - 23 all depend from claim 20, and recite additional patentable subject matter.

Claims 21 - 23 are therefore all deemed allowable, with respect to the outstanding 35 USC §112 rejection, in light of the above discussion of the allowability of claim 20, with respect to the outstanding 35 USC §112 rejection.

Claims 24, 29, and 32 are specifically rejected for omitting an input unit operative to receive a presentation time stamp (PTS). Claims 24, 29, and 32 all recite either “a second input unit operative to receive a packetized elementary stream (PES)” (Claims 24 and 29) or “means for receiving a packetized elementary stream (PES)” (Claim 32).

As was pointed out above, with reference to the above discussion of the receiving of PTS in claims 16 and 28, PTS is carried in the PES.

Since claims 24, 29, and 32 recite either a PES receiving unit or means, a PTS receiving unit or means is inherently recited in claims 24, 29, and 32.

Claims 24, 29, and 32 are therefore deemed allowable, with respect to the outstanding 35 USC §112 rejection, in light of the above discussion.

Even though the Office Action did not specify detailed reasons for the rejection of claims 25 - 28 under 35 USC §112, Applicant assumes that the same basis for rejection applies to dependent claims 25 - 28 as applied to base claim 24, that is, as lacking a PTS receiving unit.

Nevertheless, claims 25 - 28 all depend from claim 24, and recite additional patentable subject matter.

Claims 25 - 28 are therefore all deemed allowable, with respect to the outstanding 35 USC §112 rejection, in light of the above discussion of the allowability of claim 24, with respect to the outstanding 35 USC §112 rejection.

Claims 1, 3 - 6, 8 - 11, 13 - 16, 18 - 20, 22 - 24, and 26 - 33 stand rejected under 35 USC §102(b) as being unpatentable over Thatcher et al. (US 5,937,067). As noted above, Thatcher incorporates the ISO/IEC 13818-1 standard

by reference (Thatcher col. 4, lines 33 - 37). Elements of ISO/IEC 13818-1 also form a portion of the rejection.

Thatcher describes a system enabling a local cable broadcaster to exercise control of access to a broadcasted national transport data stream by subscribers of the local cable broadcaster.

Claims 2, 7, 12, 17, and 21 stand rejected under 35 USC §103(a) as being unpatentable over Thatcher in view of Kulig et al (US 2003/0110229).

Kulig describes a method and system for controlling transmission of data packets over a network. Kulig's significance in the present discussion is that Kulig describes encrypting data packets with symmetric encryption, where Thatcher only describes using an asymmetric encryption scheme.

In rejecting claim 1, pages 6-7 of the Office Action contrasted the recitation of claim 1 with quotations from Thatcher, including the alleged quotation: "The encryption of the entire packetized elementary stream includes encryption of the timecodes." This language does not appear in Thatcher, neither at col. 5 lines 28 - 29 as cited on page 7 of the Office Action, nor at any other location that the Applicant is able to determine. Furthermore, Fig. 4 (also cited on page 7 of the Office Action in support of that alleged quotation) does not indicate the presence of any timecodes. Fig. 4 does show that Program Clock Reference is included in the encrypted stream. However, the ISO/IEC 13818-1 standard makes clear (see ISO/IEC 13818-1 paragraph 2.1.42) that PCR is in the Transport Stream, not in the PES.

As discussed above, timecodes (and specifically PTS and DTS) are carried in the PES. Thus, asserting that Thatcher discloses the timecode claim limitation on the basis of PCR, is inconsistent with ISO/IEC 13818-1 and the understanding of a person of ordinary skill in the art.

In Thatcher, the timecodes are encrypted as an intrinsic portion of the PES. In the present invention, by contrast, the timecode is encrypted using any appropriate type of encryption, into a sequence of encrypted bytes and placed in an encryption container prior to insertion in the PES. Claim 1 has been amended accordingly, in order to make this distinction particularly clear.

The amendment of claim 1 is supported, intra-alia, on pages 16 and 19 of the specification and Appendix A of the specification.

Applicant respectfully points out that encryption of the timecode independent of the encryption of the PES is particularly advantageous for at least the following reasons:

1. it is possible to encrypt the timecode using a different encryption scheme and using different encryption keys than the encryption scheme and encryption keys used to encrypt the PES. This means that even if the encryption of the PES is compromised, the timecode remains encrypted;

2. in the system of Thatcher, once the PES is decrypted, the timecodes comprised therein are also decrypted. Thus, ad skipping based on using timecodes to predict locations of advertisements becomes a trivial matter. In the present invention, by contrast, ad skipping quickly becomes a non-trivial matter, in that timecode is independently encrypted; and

3. in the present invention, even if PES is broadcast in the clear, the timecode is still encrypted (see, for instance, page 3 of the specification, lines 14 - 22).

Furthermore, in rejecting claim 1, the Office Action also stated on page 7: "and at a time associated with the associated PTS associated with the one frame, outputting a packetized elementary stream (PES) comprising the plurality of encrypted timecodes ("Program Reference Clock" see fig. 4 ref no PCR, and ISO/IEC 13818-1 page 4)". As was noted above, PCR is in the Transport Stream (see ISO/IEC 13818-1, paragraph 2.4.4.2, especially equations 2-1 through 2-5 for the calculation of PCS, and paragraph 2.4.3.1, especially Tables 2-1 and 2-2 for the syntax and semantics of the Transport stream), not in the PES (see ISO/IEC 13818-1, paragraph 2.4.3.7, Table 2-17, and equations 2-11 and 2-12), and as such is not considered timecode by those skilled in the art.

Claim 1 is therefore deemed allowable.

Claims 2 - 5 all depend from claim 1 and recite additional patentable matter.

Claims 2 - 5 are deemed allowable, in light of the above discussion of the allowability of claim 1.

The rejection of claim 6 cites, in part, the same portions of Thatcher on which the rejection of claim 1 relies, and is traversed for the same reasons as with claim 1.

Claim 6 was amended in a similar fashion to claim 1.

Claim 6 is therefore deemed allowable in light of the above discussion, and in light of the discussion of the allowability of claim 1.

Claims 7 - 10 all depend from claim 6 and recite additional patentable matter.

Claims 7 - 10 are deemed allowable, in light of the above discussion of the allowability of claim 6.

Claim 11 claims a timecode generator. Claim 30 is an apparatus claim in means-plus-function form corresponding to claim 11. The Office Action asserted, in rejecting claims 11 and 30 that the multiplexer 64 of Fig. 4 comprises a timecode generator. In point of fact, the multiplexer 64 of Thatcher is not a timecode generator. First of all, Fig. 4 shows that the PES packet is input into the multiplexer 64. As discussed above, timecode is already comprised in the PES packet. The multiplexer of Thatcher Fig. 4 is not depicted as generating its own inputs. Furthermore, the specification of Thatcher states “Multiplexer/encryptor 64 combines individual transport packets 62 into a frame of data 60”. Applicant respectfully notes that there does not appear to be any further discussion of the functionality of the multiplexer/encryptor 64 in Thatcher and, therefore, no disclosure of any timecode generation properties of multiplexer/encryptor 64 in Thatcher.

At any rate, claim 11 recites, “an encryptor operative to encrypt the timecode for each one of the plurality of frames, using the encryption key and the implemented encryption method, thereby producing a plurality of encrypted timecodes,” similar to claims 1 and 6. Applicant refers to the above discussion of this point, instead of repeating that discussion.

Claim 11, prior to the present amendment, also recited: “a packetized elementary stream (PES) outputter operative to receive a plurality of encryption containers, each containing an encrypted timecodes and, at a time associated with the associated presentation time stamp (PTS) associated with the

one frame, to output a PES comprising the plurality of encrypted timecodes.” In discussing this claim limitation, the rejection referred to the Transport Data Stream (TDS) of Fig. 4. The TDS is an encrypted transport stream, comprising the PES in the transport stream.

Claims 11 and corresponding claim 30 have been amended in a fashion similar to the amendment to claims 1 and 6. In addition to making the distinction particularly clear regarding the “encryptor operative to encrypt the timecode” clause, amending the details of the PES outputter receiving the encryption containers makes the distinction of the timecode generator claimed in claims 11 and 30 over the TDS output by the multiplexer 64 of Thatcher Fig. 4.

Claims 11 and 30 are therefore deemed allowable, in light of the above discussion, and in view of the discussion of the allowability of claims 1 and 6, above.

Claims 12 - 15 all depend from claim 11 and recite additional patentable matter.

Claims 12 - 15 are deemed allowable, in light of the above discussion of the allowability of claim 11.

Claim 16 claims a method of using the timecode produced using an appropriate timecode producing method, for example, but not limited to using the timecode generator of claim 1. Claim 16 has, accordingly, been amended in a fashion corresponding to the amendment of claim 1.

Claim 16 is therefore deemed allowable.

Claims 17 - 19 all depend from claim 16 and recite additional patentable matter.

Claims 17 - 19 are deemed allowable, in light of the above discussion of the allowability of claim 16.

Claim 20 claims a method of using the timecode produced using an appropriate timecode producing method, for example, but not limited to using the timecode generator of claim 6. Claim 20 has, accordingly, been amended in a fashion corresponding to the amendment of claim 1.

Claim 20 is therefore deemed allowable with reference to the discussion of the allowability of claim 6.

Claim 31 is an apparatus claim in means-plus-function form corresponding to claim 6.

Claim 31 has been amended in a manner corresponding to the amendment of claim 6.

Claim 31 is therefore deemed allowable with reference to the discussion of the allowability of claim 6.

Claim 33 is an apparatus claim in means-plus-function form corresponding to claim 20.

Claim 33 has been amended in a manner corresponding to the amendment of claim 20.

Claim 33 is therefore deemed allowable with reference to the discussion of the allowability of claim 20.

Claims 21 - 23 all depend from claim 20 and recite additional patentable matter.

Claims 21 - 23 are deemed allowable, in light of the above discussion of the allowability of claim 20.

Claim 24 claims a timecode handler which receives a timecode such as the timecode generated by the timecode generator of claim 1.

Claim 24 has, therefore, been amended in a fashion corresponding to the amendment of claim 1.

Claim 24 is deemed allowable, in light of the above discussion of the allowability of claim 1.

Claim 32 is an apparatus claim in means-plus-function form corresponding to claim 24.

Claim 32 is deemed allowable, in light of the above discussion of the allowability of claim 24.

Claims 25 - 27 all depend from claim 24 and recite additional patentable matter.

Claims 25 - 27 are deemed allowable, in light of the above discussion of the allowability of claim 24.

Claims 28 and 29 are claims for a whole end-to-end system. Claim 28 corresponds to a combination of claims 1 and 16.

Claim 28 has been amended in a fashion corresponding to the amendments of claims 1 and 16.

Claim 28 is therefore deemed allowable.

Claim 29 corresponds to a combination of claims 6 and 24.

Claim 29 has been amended in a fashion corresponding to the amendments of claims 6 and 24.

Claim 29 is therefore deemed allowable.

In view of the foregoing remarks, it is respectfully submitted that the present application is in condition for allowance. Favorable reconsideration and allowance of the present application are respectfully requested.

Respectfully submitted,

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